

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1, 4, 6, 7, 11, and 16-22 are amended by the present amendment. Amended Claims 1, 4, 6, 7, 11, and 16-22 are supported by the original specification and drawings,¹ and therefore add no new matter.

The specification is objected to as incorporating material by reference to a foreign patent. Claims 1, 3-8, 10-12, and 14-22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over the Tool and Manufacturing Engineer's Handbook (hereinafter the *Engineer's Handbook*) in view of Mori and Nomura.

With regard to the objection to the specification, it is respectfully submitted that this objection was overcome by the Amendment filed May 8, 2003. In this Amendment, it was respectfully noted that the Abstract of the Disclosure does not contain any reference to a foreign patent application. However, the Field of the Invention did contain such a reference, which was deleted by the Amendment filed May 8, 2003. Accordingly, the objection to the specification is believed to be overcome by this previous amendment.

With regard to the rejection of Claims 1, 3-8, 10-12, and 14-22 under 35 U.S.C. §103(a) as unpatentable over the *Engineer's Handbook* in view of Mori and Nomura, this rejection is respectfully traversed.

Amended Claim 1 recites a hole forming tool "wherein a core diameter thereof is in a range of 0.38D to 0.42D, wherein D comprises a cutting edge diameter of said hole forming tool and said core diameter is a diameter of a solid core of material extending out to said one or more chip discharging grooves."

¹See e.g. Specification at paragraph 42 and Figure 3.

The outstanding Office Action cited Figures 9-30 and 9-31 of the *Engineer's Handbook* as teaching or suggesting this element. However, it is respectfully submitted that Figure 9-31 of the *Engineer's Handbook* is a graph of *chisel edge length* vs. torque and thrust force, not "a core diameter," as recited in Claim 1. Lines 12 and 13 on page 9-44 state that chisel edge length is proportional to web thickness, and Figure 9-30 illustrates that chisel edge length is always greater than the web thickness. Accordingly, a graph showing chisel edge length being varied between 0 and 0.5, *does not* disclose a web thickness being varied from 0 to 0.5. Web thickness will vary from 0 to a number less than 0.5, depending on the drill geometry. Since there is no fixed proportion taught or suggested between chisel edge length and web thickness, it is respectfully submitted that drills having a web thickness of 0.38D to 0.42D are not taught or suggested by the *Engineer's Handbook*.

In fact, assuming *arguendo* that the Figure 9-30 of the *Engineer's Handbook* is to scale, Figure 9-30 shows a drill having a web thickness of approximately .07D at Section A-A (approximately 2.5 mm web thickness/36 mm cutting edge diameter) and approximately .18D at Section B-B (approximately 7 mm web thickness/38 mm cutting edge diameter). Thus, not only does Figure 9-30 of the *Engineer's Handbook* not teach or suggest the above-quoted element, Figure 9-30 teaches away from the invention recited in Claim 1.

Accordingly, it is respectfully submitted that a core diameter of 0.38D to 0.42D, as recited in Claim 1, is greater than the core diameters taught or suggested by Figures 9-30 and 9-31. Since the core diameters recited in Claim 1 lie beyond the range shown in the cited figures, it is respectfully submitted that the "general conditions" of the claim have not been disclosed by the cited references. Accordingly, the holding of *In re Aller*, cited in the outstanding Office Action, is not applicable to this case.

Since the cited references do not teach or suggest each and every element of Claim 1, it is respectfully submitted that Claim 1 (and Claim 3 dependent therefrom) is patentable over the cited references.

Amended independent Claims 4, 6, 7, 11, and 16-22 recite similar elements to Claim 1. It is respectfully submitted that Claims 4, 6, 7, 11, and 16-22, and all claims dependent therefrom, are patentable over the cited references for at least the reasons discussed above with respect to Claim 1.

Accordingly, the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.


Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)



Gregory J. Maier
Registration No. 25,599
James Hamilton
Registration No. 28,421
Attorneys of Record